

Unit 6 REVIEW PACKET

Directions: In the box provided next to each target section, put an (S) if you were able to complete the section by *yourSELF*, an (H) if you received a *minimal* amount of *HELP* from me, a classmate, or another source, or a (D) if you felt the section was *DIFFICULT* and required you to get *a lot* of help. This will help provide you by giving you feedback as to what topics you should be focusing on as you prepare for the test.



TARGET A

For #1 – 4, simplify the ratio. Be sure to check your units before you simplify!

$$1) \frac{4\text{oz}}{2\text{qt}} \cdot \frac{1\text{qt}}{32\text{oz}} = \frac{4}{64} = \frac{1}{16}$$

$$2) \frac{2\text{cups}}{3\text{gallons}} \cdot \frac{1\text{gal}}{16\text{cups}} = \frac{2}{48} = \frac{1}{24}$$

$$3) \frac{10\text{minutes}}{1\text{hour}} \cdot \frac{1\text{hr}}{60\text{min}} = \frac{10}{60} = \frac{1}{6}$$

$$4) \frac{8\text{ft}}{9\text{inches}} \cdot \frac{12\text{in.}}{1\text{ft}} = \frac{96}{9} = \frac{32}{3}$$

For #5 – 8, perform the indicated unit conversion.

5) 45 ft to yd

$$45\text{ft} \cdot \frac{1\text{yd}}{3\text{ft}} = \frac{45\text{yds.}}{3} = 15\text{yds.}$$

6) 15 lb to kg

$$15\text{lb} \cdot \frac{1\text{kg}}{2.2\text{lb}} = \frac{15\text{kg}}{2.2} = 6.8\text{kg}$$

7) 10 mi to ft

$$10\text{mi} \cdot \frac{5280\text{ft.}}{1\text{mi}} = 52800\text{ft.}$$

8) 1000 cm to m

$$1000\text{cm} \cdot \frac{1\text{m}}{100\text{cm}} = \frac{1000\text{m}}{100} = 10\text{m}$$

9) A picture has a width of 6 inches. An enlargement of the picture has a width of 3 feet. Find the ratio of the picture to the enlargement.

$$\frac{6\text{in.}}{3\text{ft}} \cdot \frac{1\text{ft}}{12\text{in}} = \frac{6}{36} = \frac{1}{6}$$

10) The ratio of the angles in a triangle is 3:7:10. Find the measure of each of the angles.

$$\begin{aligned} 3x + 7x + 10x &= 180 \\ 20x &= 180 \\ x &= 9^\circ \end{aligned}$$

$$\begin{aligned} 3x &= 3 \cdot 9 = 27^\circ \\ 7x &= 7 \cdot 9 = 63^\circ \\ 10x &= 10 \cdot 9 = 90^\circ \end{aligned}$$



TARGET B

For #11-15, solve each proportion. Round decimals to the nearest hundredths place.

11) $\frac{2z}{27} = \frac{3z+9}{81}$

$$2z \cdot 81 = 27(3z+9)$$

$$162z = 81z + 243$$

$$81z = 243$$

$$z = 3$$

12) $\frac{(x+2)}{3} = \frac{8}{9}$

$$9(x+2) = 3 \cdot 8$$

$$9x + 18 = 24$$

$$9x = 6$$

$$x = \frac{6}{9} = \frac{2}{3}$$

13) $\frac{(x+2)}{4} = \frac{(x-4)}{2}$

$$4(x-4) = 2(x+2)$$

$$4x - 16 = 2x + 4$$

$$2x - 16 = 4$$

$$2x = 20$$

$$x = 10$$

- 14) An oil painting has a length of 60 inches and a width of 30 inches. A postcard of the painting has a length of 2.5 inches. What is the width of the postcard?

$$\frac{l}{w} = \frac{60}{30} = \frac{2.5}{x}$$

$$60x = 30 \cdot 2.5$$

$$60x = 75$$

$$x = 1.25 \text{ inches}$$

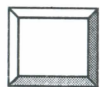
- 15) A carpet cleaning solution calls for a mixture of 3 ounces of cleaner per 2 quarts of water. You use a total of 13 quarts of water in the mixture. How much cleaning solution do you use?

$$\frac{3 \text{ oz}}{2 \text{ qts}} = \frac{x}{13 \text{ qts}}$$

$$2x = 3 \cdot 13$$

$$2x = 39$$

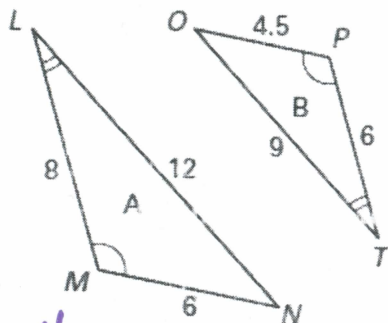
$$x = 19.5 \text{ oz}$$



TARGET C

For #16-17, write the similarity statement and find the scale factor.

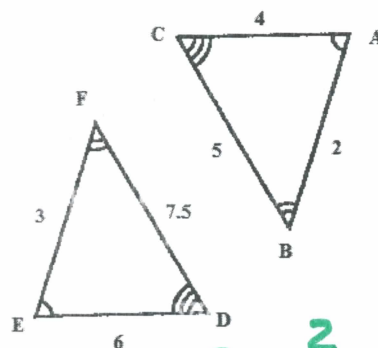
16)



$$SF = \frac{8}{6} = \frac{4}{3}$$

$\triangle LMN \sim \triangle TPO$, scale factor $\frac{4}{3}$

17)



$$SF = \frac{2}{3}$$

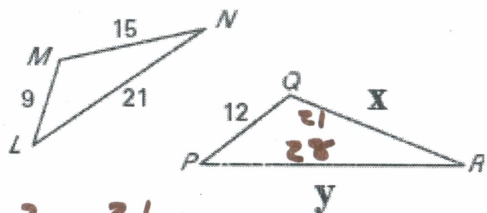
$\triangle ABC \sim \triangle FED$, scale factor $\frac{2}{3}$



TARGET D & F

For #18 - 22, solve for x and/or y for the similar triangles.

18) $\triangle LMN \sim \triangle PQR$



$$SF = \frac{9}{12} = \frac{3}{4}$$

$$\frac{3}{4} = \frac{15}{x}$$

$$3x = 4 \cdot 15$$

$$3x = 60$$

$$x = 20$$

$$\frac{3}{4} = \frac{21}{y}$$

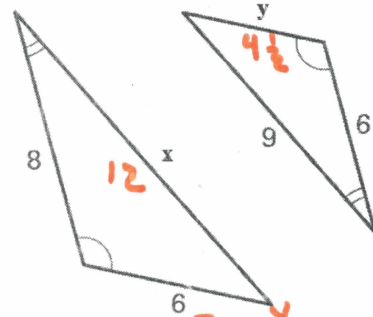
$$3y = 84$$

$$3y = 4 \cdot 21$$

$$y = 28$$

$$x = \underline{20} \quad y = \underline{28}$$

19)



$$SF = \frac{6}{8} = \frac{3}{4}$$

$$\frac{3}{4} = \frac{9}{x}$$

$$3x = 4 \cdot 9$$

$$3x = 36$$

$$x = 12$$

$$\frac{3}{4} = \frac{y}{6}$$

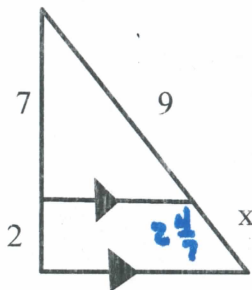
$$4y = 3 \cdot 6$$

$$4y = 18$$

$$y = 4 \frac{1}{2}$$

$$x = \underline{12} \quad y = \underline{4 \frac{1}{2}}$$

20)



$$\frac{7}{2} = \frac{9}{x}$$

$$7x = 2 \cdot 9$$

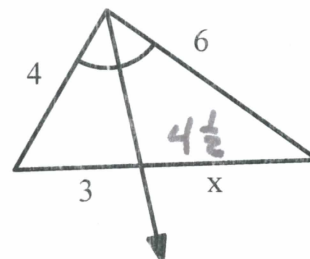
$$7x = 18$$

$$x = \frac{18}{7}$$

$$= 2 \frac{4}{7}$$

$$x = \underline{\frac{18}{7} \text{ or } 2 \frac{4}{7}} \quad \approx 2.57$$

21)



$$\frac{4}{6} = \frac{3}{x}$$

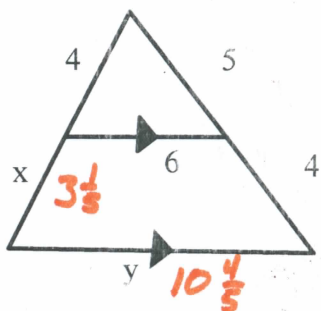
$$4x = 3 \cdot 6$$

$$4x = 18$$

$$x = 4 \frac{1}{2}$$

$$x = \underline{4 \frac{1}{2}}$$

22)



$$\frac{5}{4} = \frac{4}{x}$$

$$5x = 4 \cdot 4$$

$$5x = 16$$

$$x = 3 \frac{1}{5}$$

$$\frac{5}{9} = \frac{6}{y}$$

$$5y = 9 \cdot 6$$

$$5y = 54$$

$$y = 10 \frac{4}{5}$$

$$x = \underline{3 \frac{1}{5} \text{ or } 3.2}$$

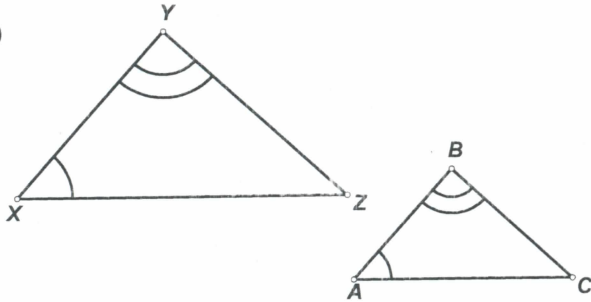
$$y = \underline{10 \frac{4}{5} \text{ or } 10.8}$$



TARGET E

For #23-28, decide what method (AA~, SSS~ or SAS~) you can use to prove the triangles are similar. Then complete the similarity statement.

23)



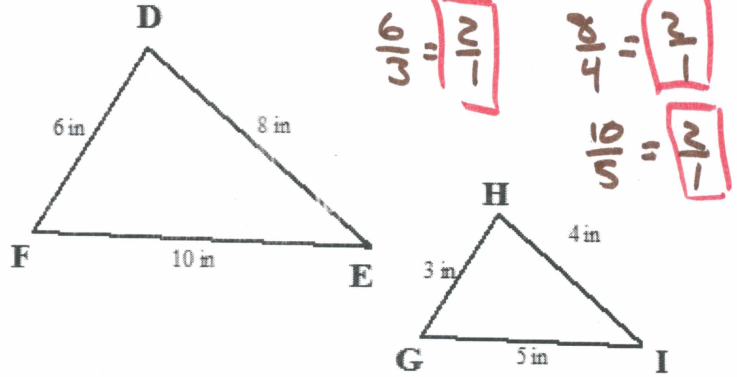
AA~

SSS~

SAS~

$\triangle XYZ \sim \triangle \underline{ABC}$

24)



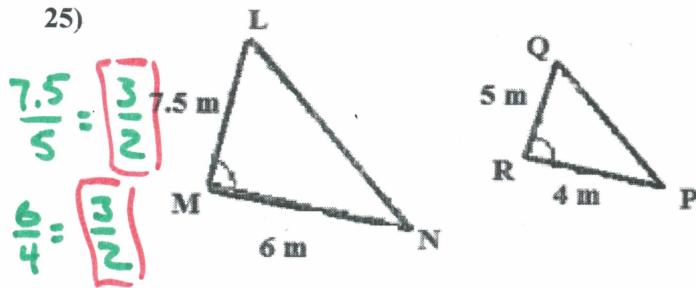
AA~

SSS~

SAS~

$\triangle DEF \sim \triangle \underline{HIG}$

25)



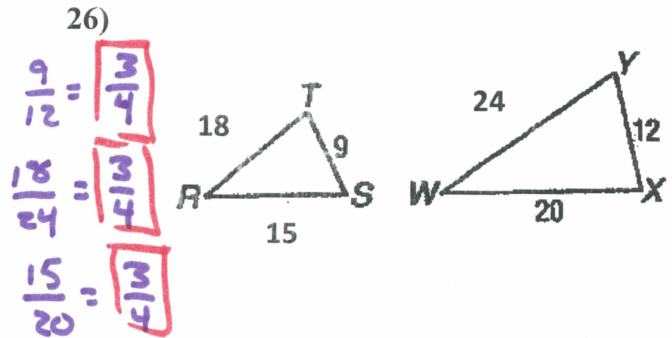
AA~

SSS~

SAS~

$\triangle LMN \sim \triangle \underline{QRP}$

26)



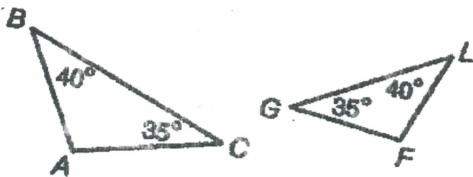
AA~

SSS~

SAS~

$\triangle RTS \sim \triangle \underline{WYX}$

27)



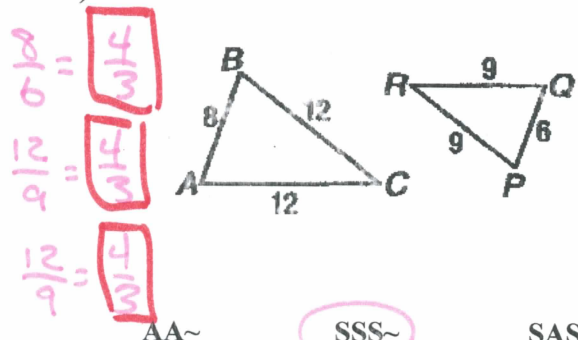
AA~

SSS~

SAS~

$\triangle ABC \sim \triangle \underline{FLG}$

28)



AA~

SSS~

SAS~

$\triangle ABC \sim \triangle \underline{QPR}$
or $\triangle ABC \sim \triangle \underline{PQR}$